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Stone, Clay, Glass, and Concrete Products Industry Indexes

September 2002

This report analyzes and explains the USGS's monthly leading and coincident indexes for the stone, clay, glass, and concrete products industry, SIC 32. Under the North American Industry Classification System (NAICS) this industry is referred to as nonmetallic mineral products, NAICS 327. This industry processes certain industrial minerals, minerals that are neither metals nor fuels, into useful products. More than 50 percent of the total value of these products is shipped to the highly cyclical construction industry. The indexes have been computed for each month back to 1948 and are available on the World Wide Web at: http://minerals.usgs.gov/minerals/pubs/imii/scghist.txt

Analysis

The leading index fell 0.5% in August to 189.8 from a revised 190.8 in June, and its 6-month smoothed growth rate dropped to -0.7% from a revised 0.7% in July. The 6-month smoothed growth rate is a compound annual rate that measures the near-term trend. A growth rate above +1.0% is usually a signal of future growth in industry activity, while a growth rate below -1.0% points to a decrease in activity.[1] The leading index growth rate, which has been steadily declining since February, has now dipped into negative territory. Furthermore, it is nearing the threshold that signals a downturn in activity. Activity growth in the stone, clay, glass, and concrete products industry is likely to be modest, at best, in the next few months.

In August, all four of the leading index components either decreased or remained at their July levels. A smaller yield spread between the U.S. 10-year Treasury bond rate and the Federal Reserve's federal funds rate made the largest negative contribution to the leading index, -0.4 percentage points. A dip in new housing permits issued pulled the leading index down -0.2 percentage points, while the S&P stock price index for building products companies contributed -0.1 percentage point. Finally, the August average workweek in the stone, clay, glass, and concrete products industry was the same as in July (table 2).

Current industry activity, as measured by the coincident index, increased 0.9% in August, and the index's 6-month smoothed growth rate rose to 3.8% from a revised 2.2% in July. The high growth rate indicates that the recovery that began earlier this year has not yet ended.

[1]The 6-month smoothed growth rate is a compound annual rate based on the ratio of the current month's index to its average level during the preceding 12 months.

Explanation

The USGS uses the same methodology for the stone, clay, glass, and concrete products indexes that it uses for the metal manufacturing indexes in the *Metal Industry Indicators*. This methodology consists of constructing and tracking, each month, two composite indexes of diverse economic indicators. The composite leading index for stone, clay, glass, and concrete products signals, several months in advance, major changes in current economic activity as measured by a composite coincident index. The construction of the leading and coincident indexes follows well-established procedures for the analysis of cyclical indicators that were developed at the National Bureau of Economic Research, the U.S. Department of Commerce, and the Center for International Business Cycle Research.

Coincident indicators

The indicators selected to represent current activity in the coincident index for the stone, clay, glass, and concrete products industry are industrial production, the value of shipments in 1982 dollars, and total employee hours worked. The stone, clay, glass, and concrete products coincident index begins to reflect the NAICS classification starting in 1997 because of the switch from the SIC to the NAICS for shipments, while the index for earlier years follows the SIC. Hence, the coincident index from 1997 forward is not entirely consistent with that of earlier years because of small changes in the way some industrial mineral shipments are now classified.

Leading indicators

Leading indicators represent various economic activities that can point to near-term changes in industry activity. The following four indicators proved to be reliable at signaling major changes in economic activity in the stone, clay, glass, and concrete products industry: 1) average weekly hours worked in the stone, clay, glass, and concrete products industry; 2) an index of new private housing units authorized by building permits in the United States; 3) the Standard & Poor's stock price index for building products companies; and 4) the yield spread between the 10-year Treasury bond interest rate and the federal funds interest rate. The leading index is not affected by the introduction of the NAICS. The composite leading index constructed from these indicators turned before the coincident index at every

trough and at 94% of the peaks. Although the leading index did not lead the coincident index at every peak, the average leads at troughs and peaks were 6.8 and 9.9 months, respectively, for an overall lead of 8.3 months.

This report was produced at the U.S. Geological Survey (USGS) by the Minerals Information Team. For more information about these indexes, contact Gail James (703-648-4915), e-mail (gjames@usgs.gov); or Ken Beckman (703-648-4916), e-mail (kbeckman@usgs.gov).

The USGS also produces *Mineral Industry Surveys* (MIS) for virtually all industrial minerals important to the U.S. economy. These include MIS for Cement, Clays, Crushed Stone, Dimension Stone, and Construction Sand and Gravel. Information on how to access these reports is available on the World Wide Web at: http://minerals.usgs.gov/minerals/pubs

Tables and charts follow.

Table 1.
The Stone, Clay, Glass, and Concrete Products Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2001				
September	184.4	5.2	150.3	-2.8
October	184.3	4.1	150.5	-2.1
November	186.2	4.9	149.3	-3.2
December	189.8	7.5	147.8	-4.6
2002				
January	192.5	8.8	149.3	-2.5
February	194.8	9.8	148.7	-3.0
March	193.8	7.3	149.3	-2.0
April	194.7	7.1	152.8r	2.7r
May	193.8	5.1	153.2r	3.2r
June	194.2	4.6	153.1r	3.1r
July	190.8r	0.7r	152.4r	2.2r
August	189.8	-0.7	153.8	3.8

r: *Revised*

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 2.
The Contribution of Each Stone, Clay, Glass, and Concrete Products Index Component to the Percent Change in the Index from the Previous Month

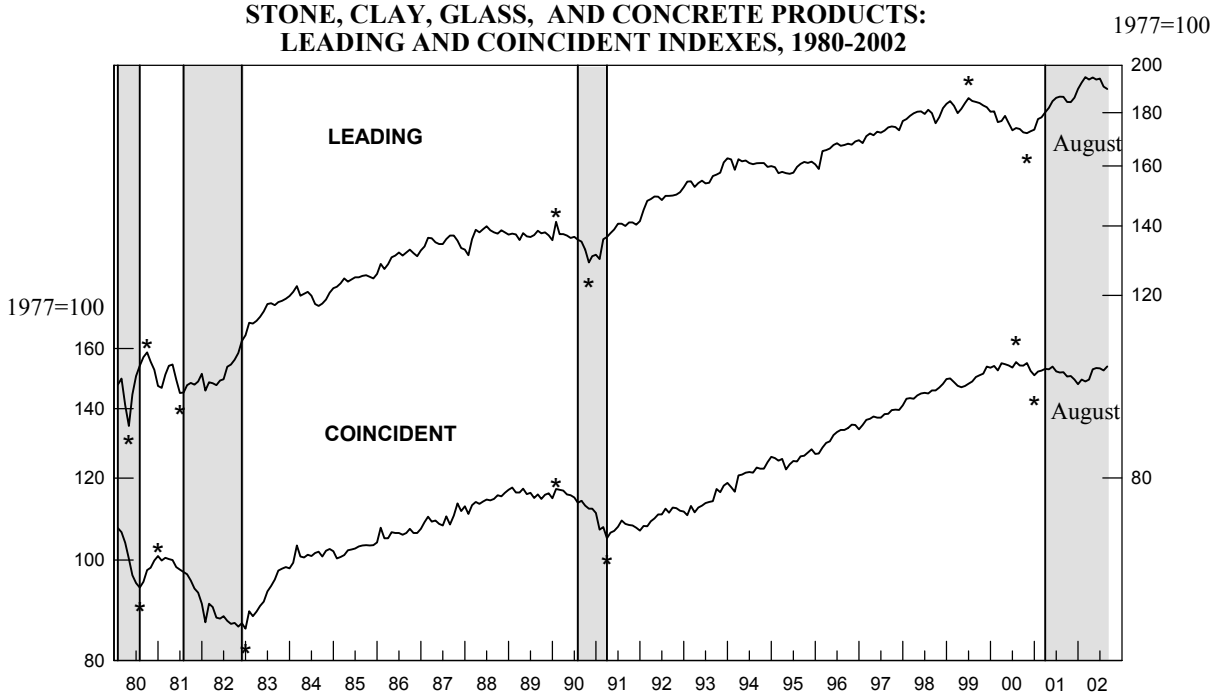
Leading Index	**July**	**August**
1. Average weekly hours, stone, clay, glass, and concrete products (SIC 32)	-0.9	0.0
2. Index of new private housing units authorized by permits	0.0	-0.2
3. S&P stock price index, building products companies	-0.8	-0.1
4. Spread between the U.S. 10-year Treasury Note and the federal funds rate	-0.3	-0.4
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-1.9	-0.6
Coincident Index		
1. Industrial production index, stone, clay, glass, and concrete products (SIC 32)	-0.1r	0.0
2. Total employee hours, stone, clay, glass, and concrete products (SIC32)	-0.4r	0.8
3. Shipments of stone, clay, glass, and concrete products (nonmetallic mineral products NAICS 327)	-0.1	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.5r	0.9

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Standard & Poor's; 4, Federal Reserve Board, Conference Board, and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey. All series are seasonally adjusted, except 3 of the leading index.

r: Revised ***NA:*** *Not available*

Chart 1.

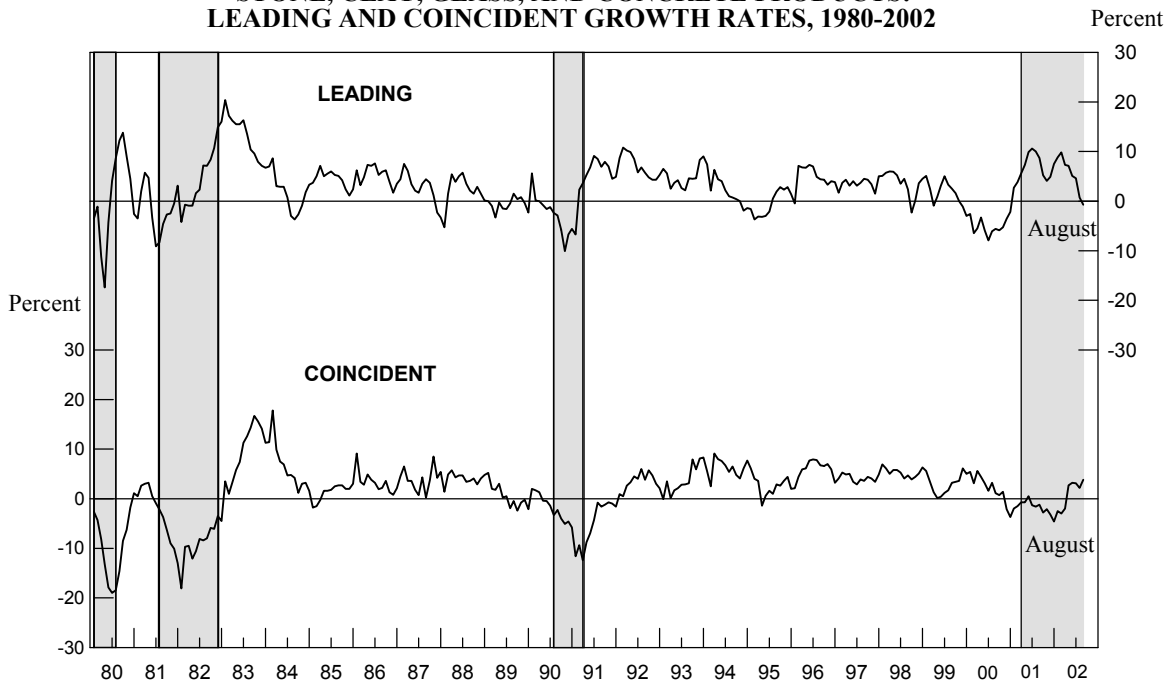
STONE, CLAY, GLASS, AND CONCRETE PRODUCTS: LEADING AND COINCIDENT INDEXES, 1980-2002



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes. More than 50% of the value of shipments of stone, clay, glass, and concrete products is used in the construction industry.

Chart 2.

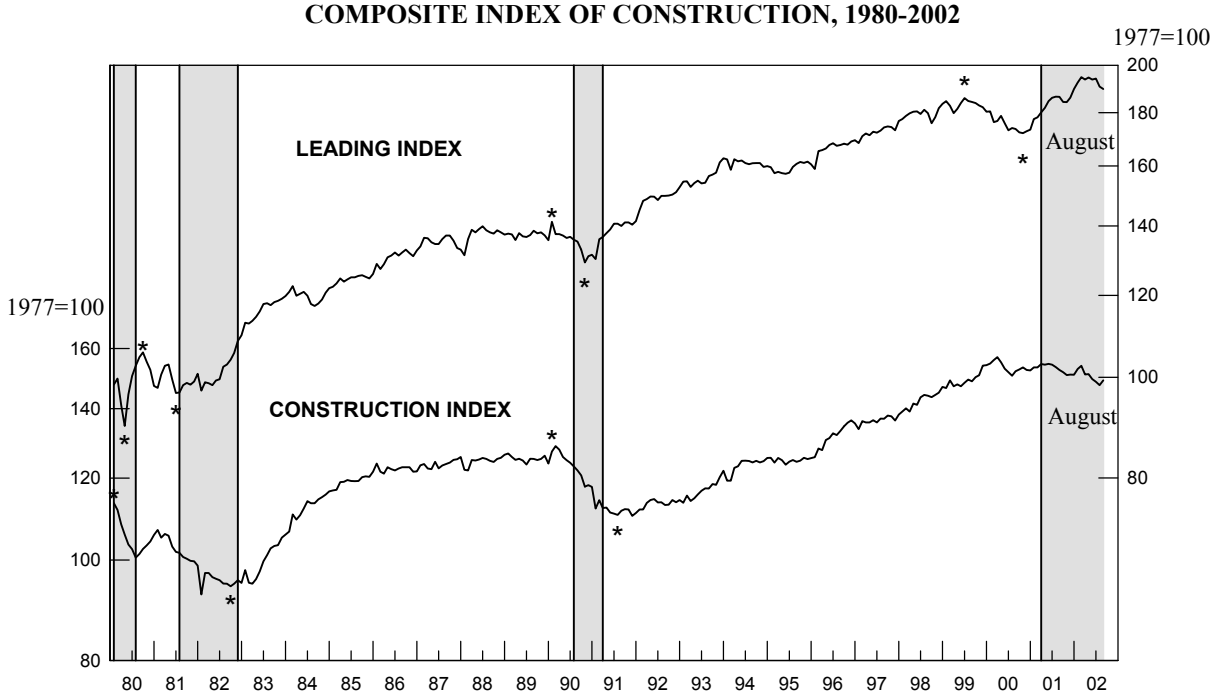
STONE, CLAY, GLASS, AND CONCRETE PRODUCTS: LEADING AND COINCIDENT GROWTH RATES, 1980-2002



Shaded areas are business cycle recessions. The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Chart 3.

STONE, CLAY, GLASS, AND CONCRETE PRODUCTS LEADING INDEX and COMPOSITE INDEX OF CONSTRUCTION, 1980-2002

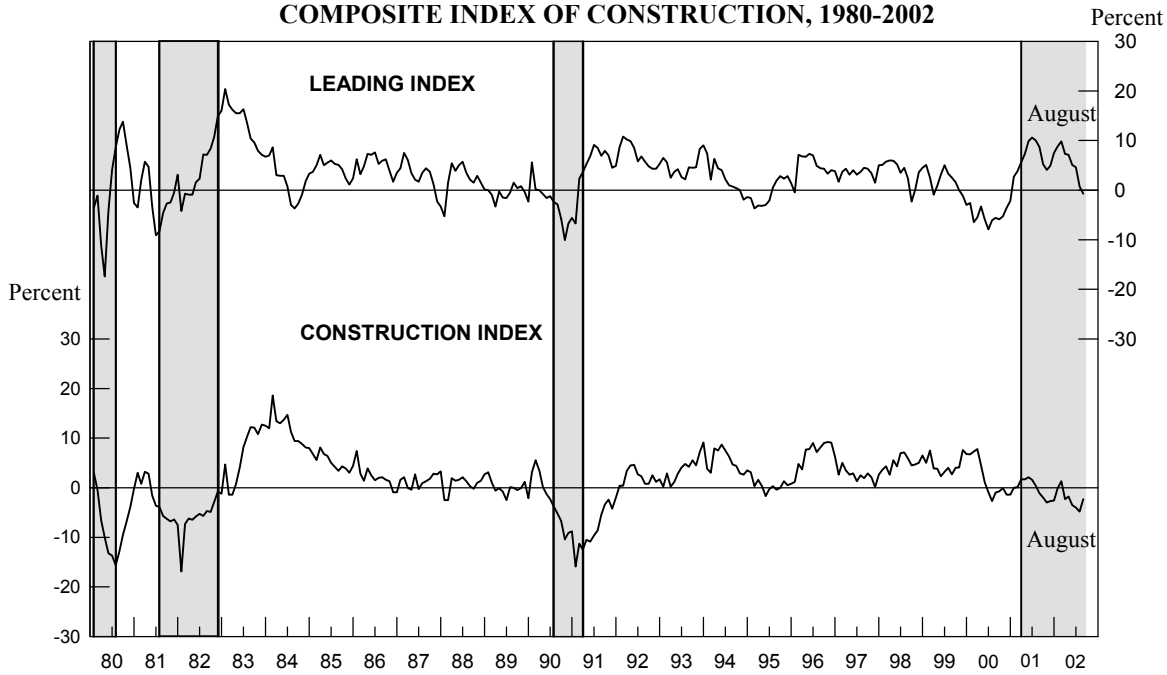


Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes. More than 50% of the value of shipments of stone, clay, glass, and concrete products is used in new construction. The composite index of construction combines the value of new construction put in place and total employee hours worked in construction.
Sources: U.S. Geological Survey, Bureau of Labor Statistics, and U.S. Census Bureau.

Chart 4.

GROWTH RATES

STONE, CLAY, GLASS, AND CONCRETE PRODUCTS LEADING INDEX and COMPOSITE INDEX OF CONSTRUCTION, 1980-2002



Shaded areas are business cycle recessions. The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.